

	Type	L #	Hits	Search Text	DBs
1	BRS	L5	1	4 near20 situ	USPAT
2	BRS	L6	100740	4 sane situ	USPAT
3	BRS	L7	6	4 same situ	USPAT
4	BRS	L8	5	7 not 5	USPAT
5	BRS	L9	0	4 near20 (rapid)	USPAT
6	BRS	L10	0	4 same (rapid)	USPAT
7	BRS	L4	49	oxide near10 (oxygen near3 hydroxyl)	USPAT
8	BRS	L11	20	oxide near10 (oxygen near4 hydroxyl)	US-PGP UB; EPO; JPO; DERWE NT; IBM_TD B
9	BRS	L12	62	oxide near20 (oxygen near3 hydroxyl)	USPAT
10	BRS	L13	13	12 not 4	USPAT

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9	BRS	L12	62	oxide near20 (oxygen near3 hydroxyl)	USPAT
10	BRS	L13	13	12 not 4	USPAT
11	BRS	L14	628	oxide near10 (rapid adj2 (thermal or annealing or anneal or heating or heat))	USPAT
12	BRS	L15	11	14 near10 situ	USPAT
13	BRS	L16	0	15 near15 oxygen	USPAT
14	BRS	L17	2	issg near5 oxide	USPAT
15	BRS	L18	0	issg near5 oxide	US-PGP UB; EPO; JPO; DERWE NT; IBM_TD B

	Type	L #	Hits	Search Text	DBs
16	BRS	L19	2064	(oxidizing or oxidized or oxidation) near5 (hydroxyl)	USPAT
17	BRS	L20	13	19 near15 (advantage or advantages or benefits or benefit or reason or reasons or why)	USPAT
18	CUST	L21	70076	"438"	USPAT
19	BRS	L22	81	19 and 21	USPAT
20	BRS	L23	913	oxide near10 (oxygen near3 hydrogen)	USPAT
21	BRS	L24	571	oxide near5 (oxygen near3 hydrogen)	USPAT
22	BRS	L25	4	23 near15 (hydroxyl)	USPAT
23	BRS	L26	11876	hydrogen adj2 (radicals or ions)	USPAT
24	BRS	L27	471	26 near10 (oxidation or oxide)	USPAT
25	BRS	L28	599	26 near5 hydroxyl	USPAT
26	BRS	L29	34	28 near10 (oxidation or oxide)	USPAT

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Journal or Magazine = JNL Conference = CNF Standard = STD

1 A plasticity-based model of material removal in chemical-mechanical polishing (CMP)*Guanghui Fu; Chandra, A.; Guha, S.; Subhash, C.*

Semiconductor Manufacturing, IEEE Transactions on , Volume: 14 Issue: 4 , Nov. 2001

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[\[Abstract\]](#) [\[PDF Full-Text \(181 KB\)\]](#) JNL**2 The influence of reaction conditions on SO₂/oxidation in a discharge plasma reac***Hyun Ha Kim; Chunxi Wu; Kinoshita, Y.; Takashima, K.; Katsura, S.; Mizuno, A.*

Industry Applications, IEEE Transactions on , Volume: 37 Issue: 2 , March-April 2001

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[\[Abstract\]](#) [\[PDF Full-Text \(188 KB\)\]](#) JNL**3 Surface characterization of iron particles treated with a polyvinylchloride wetting bin***Min Chen; Nikles, D.E.*

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[\[Abstract\]](#) [\[PDF Full-Text \(56 KB\)\]](#) JNL**4 Fiber amplifier based sensors for combustion control***Walther, T.; Tweedale, G.; Ray, G.; Lucht, R.P.R.; Caton, J.A.*

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5 Vibrational spectroscopy of water at charged liquid/solid interfaces

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Ono, R.; Oda, T.

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7 CMP of polyimide for low-k dielectric application in ULSI

Ya-Li Tai; Bau-Tong Dai; Ming-Shih Tsai; I-Chung Tung; Ming-Shiann Feng

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Ollier-Durbault, V.; Gosse, B.

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Jenq-Shiu Chou; Si-Chen Lee
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Austin, M.E.; Hill, D.J.T.; O'Donnell, J.H.; Pomery, P.J.
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12 An example of the use of network thermodynamic modeling in experiments on the mechanism of oxygen toxicity

Suzuki, Y.; Ford, G.D.
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DOCUMENT-IDENTIFIER: US 6242351 B1

TITLE: Diamond slurry for chemical-mechanical planarization of semiconductor wafers

----- KWIC -----

DEPR:

Optionally, complexing agents (e.g., glycine, EDTA, citric acid, and lactic acid) can be added to the primary slurry. A complexing agent can accelerate the dissolution of small copper or copper oxide particles polished off from the

wafer surface. Complexing agents prolong the lifetime of the pad, increase the

consistency of MRR, and reduce surface scratch. Some complexing agents, glycine, for example, have been found to function with oxidizers as well, such

as, hydrogen peroxide. As the data will demonstrate, glycine has been shown to

form a complex with the copper ions generated during the polishing operation.

This complex can catalyze the decomposition of hydrogen peroxide and lead to

the formation of hydroxyl radicals ($\text{OH}^{\cdot -}$). A hydroxyl radical is a much

stronger oxidizing agent than is hydrogen peroxide. The attack of the copper

surface by a hydroxyl radical may be an underlying cause of a significant increase in copper removal rate. The static dissolution rate of copper is closely correlated to the $\text{OH}^{\cdot -}$ concentration. Similarly, the formation kinetics of $\text{OH}^{\cdot -}$ has also shown to have a direct correlation with the material removal rate of Cu during polishing.

CFSC:

438

DOCUMENT-IDENTIFIER: US 3725438 A
TITLE: PRODUCTION OF CYCLIC ACETALS

----- KWIC -----

BSPR:

Typical reactions are the reaction of acetaldehyde with ethylene oxide or ethylene glycol to form 2-methyl-1, 3 dioxolane, acetaldehyde with isobutylene

oxide or isobutylene glycol to form 2-methyl-4, 4 dimethyl-1,3 dioxolane.

The

epoxide or glycol reactant may be formed in situ from the corresponding olefin

by adding oxygen to the reaction. For instance instead of starting with propylene oxide the reactant may be propylene and the propylene oxide is formed

in situ by oxidation with oxygen and if water or other source of hydroxyl ions

is present the corresponding glycol will be formed as the reactant. Starting olefins may be such as propylene, n-butene-1, n-butene-2, isobutene, methyl butene, hexene-1 and so forth.

DOCUMENT-IDENTIFIER: JP 10194784 A
TITLE: WATER-REPELLENT GLASS

----- KWIC -----

FPAR:

PROBLEM TO BE SOLVED: To obtain a water-repellent glass having a high resistance to scuffing, high weather resistance and high chemical resistance,

and capable of holding water repellency for a long time by forming a base membrane of specific thickness substantially composed of silicon oxide, a part

of whose oxygen atoms are substituted with hydroxyl groups on a surface of a

glass sheet composed of alkali component-containing glass and forming a water-repellent membrane of specific thickness composed of an organic silicon

compound on the base membrane.

FPAR:

SOLUTION: This water-repellent glass is obtained by forming a base membrane 2

of 10-100nm in thickness substantially composed of silicon oxide, a part of whose oxygen atoms are substituted with hydroxyl groups on a surface of a glass

sheet 1 composed of alkali component-containing glass and forming a water-repellent membrane 3 of about 0.2-40nm in thickness composed of an organic silicon compound having a fluoroalkyl group on the base membrane 2. The base membrane 2 is preferably a water-repellent glass composed of $\text{SiO}_{x}/\text{SB}>x</\text{SB}>(\text{OH})<\text{SB}>y</\text{SB}>$. Here, $1.7 \leq x < 2.0$ and $y=4-2x$. Further, the

water-repellent glass preferably has a water-repellent membrane 3 of about 0.2-15nm in thickness.

DOCUMENT-IDENTIFIER: US 3607678 A

TITLE: ELECTROCOATING

----- KWIC -----

DEPR:

If the article to be coated is an oxidizable metal such as aluminum or tantalum, an oxide coating may be deposited by applying a positive potential to

the article and contacting the metal surface with an aqueous anodizing solution

containing oxygen-forming anions, such as hydroxyl, sulfate or oxalate ions.

DOCUMENT-IDENTIFIER: US 6295474 B1

TITLE: Defibrillator housing with conductive polymer coating

----- KWIC -----

BSPR:

In order to avoid passivation on the surface of titanium pacer electrodes, an iridium oxide ("IrOx") coating has been employed on the electrode of a pacing

lead, as disclosed in U.S. Pat. No. 4,919,135 (Phillips, Jr. et al.), issued to Intermedics, Inc. The oxide formed by iridium is very stable, does not grow

further, and is electrically conductive. In addition, it provides protection for the underlying metal and is reversible to aqueous based redox species, undergoing reversible redox reactions with species such as hydrogen ions and

hydroxyl ions, leading to the formation of higher oxidation state surface oxides. U.S. Pat Nos. 4,717,581 and 4,677,989 teach deposition of iridium oxide onto the metal surface of an electrode. IrOx is rough, however, and it has been observed that rough-surfaced electrodes usually tend to cause scar

tissue formation. In a surprising finding using the electrodes of the invention, it was found that the electrodes are capable of reducing the amount

of both acute and chronic coagulation of blood surrounding the electrode. It is postulated that this reduction in the amount of coagulation of blood is a direct result of the reversible reduction-oxidation occurring over the enhanced

electrically-accessible area of the electrodes. Where coagulation occurs immediately upon placement of the electrode in the tissue, it is said to be acute. Certain prior art electrodes have failed to be essentially reversible in redox reaction along their surfaces where the build up of the irreversible electrochemical products upon the surface results in entrapment of ions,

molecules, etc. derived from the serum or tissue in closest contact with the electrode surface (chronic coagulation, fibrotic growth). This in turn results

in a greater likelihood of coagulation of blood, fibrin formation and other clotting cascade moieties immediately next to the surface or entrapped therein.

IrOx coated electrodes have not been employed for hot can electrodes.

DOCUMENT-IDENTIFIER: US 5683443 A

TITLE: Implantable stimulation electrodes with non-native metal oxide
coating
mixtures

----- KWIC -----

BSPR:

In order to avoid this passivation on the surface of the valve metal, a metal oxide or a mixed metal oxide of the platinum group is used. The oxide from this group is very stable and does not grow further. In addition, it provides a protection for the underlying metal. Many of these oxides are generally reversible to aqueous based redox species and hence undergo reversible redox

reactions with species such as hydrogen ions and hydroxyl ions leading to the formation of higher oxidation state surface oxides.

DOCUMENT-IDENTIFIER: US 6362085 B1

TITLE: Method for reducing gate oxide effective thickness and leakage current

----- KWIC -----

CLPR:

8. The method of claim 1 wherein said gate oxide is grown by a method selected from the group consisting of in-situ steam generation and rapid thermal oxidation.

CLPR:

21. The method of claim 14 wherein said gate oxide is grown by a method selected from the group consisting of in-situ steam generation and rapid thermal oxidation.

DOCUMENT-IDENTIFIER: US 6326285 B1

TITLE: Simultaneous multiple silicon on insulator (SOI) wafer production

----- KWIC -----

DEPR:

In process step 420, part of the device layer is optionally converted thermally to an oxide layer. In this manner, the device layer has a corresponding reduction in its thickness. Alternatively, a variety of CVD and physical deposition processes are available for deposition of silicon dioxide as the bonding layer. In-situ conversion of the device layer to oxide by thermal oxidation can be performed by furnace oxidation or rapid thermal oxidation.

DOCUMENT-IDENTIFIER: US 6194327 B1

TITLE: Rapid thermal etch and rapid thermal oxidation

----- KWIC -----

BSPR:

The present invention relates to the manufacture of semiconductor devices, and

particularly to the removal of damage or contamination, especially oxide containing contamination, from a semiconductor substrate, and the growth of

extremely high quality oxide films during the manufacture of a semiconductor

device. More particularly, the present invention is directed to improved methods for removing contamination and damage from a substrate, and for growing

contamination-and defect-free oxide films on a substrate, by in situ
rapid

thermal etch and rapid thermal oxidation.

DOCUMENT-IDENTIFIER: US 6171911 B1

TITLE: Method for forming dual gate oxides on integrated circuits with advanced logic devices

----- KWIC -----

DEPR:

After the low pressure hydrogen bake, the wafer is placed into an oxidation furnace and a second thermal oxide is grown at a temperature of between about

600 and 800.degree. C. Referring to FIG. 1E, a second oxide 20 is grown to a

thickness of between about 15 and 50 Angstroms in a dry oxygen ambient.

During

the oxidation period the thicker oxide 14 in the first region 6 increases by a small predictable amount. Alternately the thin thermal oxide 20 may be formed

by RTO (rapid thermal oxidation) or by ISSG (in-situ steam generation).

However, a furnace grown thermal oxide is preferred.

2
5
1

AP

DOCUMENT-IDENTIFIER: US 5869405 A

TITLE: In situ rapid thermal etch and rapid thermal oxidation

----- KWIC -----

BSPR:

The present invention relates to the manufacture of semiconductor devices, and

particularly to the removal of damage or contamination, especially oxide containing contamination, from a semiconductor substrate, and the growth of

extremely high quality oxide films during the manufacture of a semiconductor

device. More particularly, the present invention is directed to improved methods for removing contamination and damage from a substrate, and for growing

contamination- and defect-free oxide films on a substrate, by in situ rapid

thermal etch and rapid thermal oxidation.